AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A demodulation apparatus for receiving signals by an adaptive modulation and coding method, and demodulating the signals, in an OFDMA based packet communication system, comprising:

a QAM demapper for performing a QAM (Quadrature Amplitude Modulation) demapping process [[to]] on the received signals by ~~fly~~ a modulation method using ~~the~~ a maximum modulation ratio, and outputting data, until modulation methods for each of the sub-channels are analyzed;

a slot buffer for storing the data outputted from the QAM demapper for each slot; and

a channel decoder for decoding the data stored in the slot buffer, for analyzing modulation methods for each of the sub-channels and transferring the analyzed modulation methods to the QAM demapper[[; and]], and for reading valid data from the data stored in the slot buffer, based on the analyzed modulation methods for each of the sub-channels and demodulating the valid data, and outputting the demodulated data.

2. (Original) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein the channel decoder controls read enable signals for controlling the data output stored in the slot buffer, and reads the valid data from the slot buffer.

3. (Original) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein the channel decoder selectively outputs addresses being accessed to only valid data from among the data stored in the slot buffer, and reads the valid data from the slot buffer.

4. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein the slot buffer comprises:

a first slot buffer for storing data outputted from the QAM demapper until the modulation methods for each of the sub-channels of the received signals are analyzed by ~~fly~~ the channel decoder; and

a second slot buffer for storing data outputted from the QAM demapper, once the modulation methods for each of the sub-channels of the received signals are analyzed by ~~fly~~ the channel decoder.

5. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 4, wherein the first slot buffer stores the data demapped by ~~fly~~ the modulation method using the maximum modulation ratio in the QAM demapper; and

the second slot buffer stores the data demapped by the modulation methods analyzed for each of the sub-channels in the QAM demapper.

6. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein the channel decoder reads the MAP information in the former part of a frame among the symbol data stored in the slot buffer, and analyzes the modulation methods for each of the sub-channels.

7. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein the QAM demapper performs a demapping process [[to]] on the received signals by ~~fly~~ the modulation methods for each of the sub-channels, and stores the output data in the slot buffer, once the modulation methods for each of the sub-channels are analyzed by ~~fly~~ the channel decoder.

8. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein in the case data are demodulated by

the modulation method using the maximum modulation ratio, a constellation for part of the data [[are]] is identical with a constellation for the data demodulated by the modulation methods for each sub-channels.

9. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 8, wherein the demodulation apparatus further comprises ~~comprisesing~~:

an FFT (Fast Fourier Transform) unit for performing FFT ~~(Fast Fourier Transform) to~~ on the received signals and outputting the signals;

a re-ordering buffer for re-ordering the signals outputted from the FFT unit and storing the signals; an equalizer for estimating channels using the signals stored in the re-ordering buffer ~~72~~ and performing equalization of the signals, and outputting the signals to the QAM demapper.

10. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein in the case the modulation method using the maximum modulation ratio is 64 QAM, and a data unit for storing in the slot buffer is 6 bits of data, the valid data by ~~fly~~ the 16 QAM modulation method are former 4 bits of data from among the 6 bits of data.

11. (Currently Amended) The demodulation apparatus in the OFDMA based packet communication system of claim 1, wherein in the case the modulation method using the maximum modulation ratio is 64 QAM, and a data unit for storing in the slot buffer is 6 bits of data, ~~data,;~~ the valid data by ~~fly~~ the QPSK modulation method are 2 bits of data in front of the 6 bits of data.

12. (Currently Amended) A demodulation method for receiving signals by ~~fly~~ an adaptive modulation and coding method and demodulating the signals, in an OFDMA based packet communication system, comprising stages of:

a) performing a demapping process [[to]] on the received signals by a

modulation method using a maximum modulation ratio and storing the signals;

b) decoding the demapped and stored signals ~~the data~~ and analyzing the modulation methods for each of the sub-channels; and

c) performing a demapping process on the received signals by ~~fly~~ the analyzed modulation methods for each of the sub-channels and demodulating the signals,

wherein the signals are stored in step a) until the modulation methods for each of the sub-channels are analyzed; only valid data from among the signals are read by the modulation methods for each of the sub-channels analyzed in step b); and the valid data are demodulated.

13. (Cancelled)